

Appl. No. : 10/695,405
Filed : October 28, 2003

AMENDMENTS TO THE CLAIMS

The listing of claims replaces all prior versions and listings of claims. Only those claims being amended herein show their changes in highlighted form, where insertions appear as underlined text (e.g., insertions) while deletions appear as strikethrough text (e.g., ~~deletions~~).

Claim 1. (Canceled).

Claim 2. (Currently Amended) A noninvasive physiological monitor comprising:

a noninvasive light source;

a magnetic field generator which imposes a magnetic field on tissue;

a polarimeter for detecting the polarization of the light source;

a noninvasive detector which generates an output responsive to light from said light source attenuated by said tissue and acted upon by said magnetic field; and

a processor responsive to said output to compensate a determination of values indicative of a blood constituent for light scattering within said tissue.

Claim 3. (Previously Presented) The noninvasive physiological monitor of Claim 2, wherein said values comprise concentration values of said blood constituent.

Claim 4. (Previously Presented) The noninvasive physiological monitor of Claim 2, wherein said blood constituent comprises glucose.

Claim 5. (Previously Presented) The noninvasive physiological monitor of Claim 2, wherein said processor compensates said determination of values by determining an indication of optical path length for said light from said light source.

Claim 6. (Previously Presented) The noninvasive physiological monitor of Claim 5, wherein said indication of said optical path length comprises mean optical path length estimates.

Claim 7. (Previously Presented) The noninvasive physiological monitor of Claim 2, comprising a polarimeter responsive to said light source and including said detector.

Claim 8. (Previously Presented) The noninvasive physiological monitor of Claim 7, wherein said polarimeter comprises a Faraday modulator.

Claim 9. (Previously Presented) The noninvasive physiological monitor of Claim 7, wherein said polarimeter comprises a photoelastic modulator.

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Claim 10. (Previously Presented) The noninvasive physiological monitor of Claim 2, wherein said light source comprises a polarized light source.

Claim 11. (Currently Amended) A method of compensating a determination of values indicative of a blood constituent, the method comprising:

applying one or more magnetic fields to tissue illuminated with light;

determining rotation of said light based on said application of one or more magnetic fields; and

compensating a determination of values indicative of a blood constituent based on said rotation; and

outputting values indicative of the compensated determination.

Claim 12. (Previously Presented) The method of Claim 11, wherein said compensating comprises:

determining an indication of optical path length for said light; and

applying said indication to determine a concentration of said blood constituent.

Claim 13. (Previously Presented) The method of Claim 12, wherein said indication of said optical path length comprises mean optical path length estimates.

Claim 14. (Previously Presented) The method of Claim 11, wherein said blood constituent comprises glucose.

Claim 15. (Currently Amended) A noninvasive optical sensor capable of outputting a signal indicative of one or more physiological parameters of tissue, the optical sensor comprising:

a light source;

a magnetic field source; and

a detector which generates an output responsive to one or more wavelengths of light from said light source and the effect of the one or more magnetic fields from said magnetic field source on the one or more wavelengths of light.

Claim 16. (Previously Presented) The noninvasive optical sensor of Claim 15, wherein said optical sensor is housed in a patient monitor.

Claim 17. (Currently Amended) The noninvasive optical sensor of Claim 15, wherein said magnetic field source comprises one or more coil pairs.

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Claim 18. (Currently Amended) The noninvasive optical sensor of Claim 15, wherein said magnetic field source comprisesing a magnet pair.

Claim 19. (Currently Amended) The noninvasive optical sensor of Claim 15, wherein said magnetic field source comprisesing a Faraday modulator.

Claim 20. (Currently Amended) The noninvasive optical sensor of Claim 15, wherein said magnetic field source comprisesing a photoelastic modulator.

Claim 21. (Cancelled)

Claim 22. (New) A noninvasive physiological monitor comprising:

- a noninvasive light source;
- a magnetic field generator which imposes a magnetic field on tissue;
- a means for detecting the polarization of the light;
- a noninvasive detector which generates an output responsive to light from said light source attenuated by said tissue and acted upon by said magnetic field; and
- a processor responsive to said output to compensate a determination of values indicative of a blood constituent for light scattering within said tissue.